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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/556,280	11/14/2005	Sukru Yilmaz	E3059-00015	6565

8933 7590 04/02/2008

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EXAMINER	
ALLI, IYABO	

ART UNIT	PAPER NUMBER
2877	

MAIL DATE	DELIVERY MODE
04/02/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/556,280	YILMAZ ET AL.	
	Examiner	Art Unit	
	IYABO S. ALLI	2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 November 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 November 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *04/15/2007*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims **1, 4, 6, 9** and **13** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Regarding claims **1, 6, 9** and **13** the phrase "such that" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

4. Regarding claims **1, 4** and **13** the phrase "can be" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims **1-6** and **8-13** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hashimoto** (5,309,214) in view of **Reynolds** (3,325,335).

As to claim 1, Hashimoto discloses refractometer with a refractometer prism **12**, on the measuring surface of which a sample **13** to be analyzed can be placed (Column 5, lines 37-41 and Fig. 2), which can be illuminated by a light source **1** & **2** in such an angle range that the critical angle of the total reflection is also contained in it, and with a receiver **15**, on which the reflected radiation **14** falls, and characterized in that the light source **1** & **2** comprises a plurality of said discrete light sources, which can be activated individually or together (Column 5, lines 1-6 & 48-50 and Fig. 2).

Hashimoto *fails to disclose* radiation can be sent in one point onto the refractometer in a bundled manner.

However, **Reynolds** teaches radiation can be sent in one point onto the refractometer in a bundled manner **50** (Column 5, lines 44-49 and Fig. 1).

It would have been obvious to one skilled in the art at the time of the invention to include the bundled manner of **Reynolds** in the refractometer of **Hashimoto** in order to provide a component to combine multiple intensities together, improving distribution within the wavelengths being illuminated on the sample under test.

As to claim 2, Hashimoto discloses all of the claimed limitations as applied to Claim 1 above **except for** the light source comprising a plurality of white light lamps arranged at preset spaced locations next to one another.

However, **Reynolds** teaches the light source comprising a plurality of white light lamps arranged at preset spaced locations next to one another (Column 5, lines 37-41).

It would have been obvious to one skilled in the art at the time of the invention to include the white light of **Reynolds** in the refractometer of **Hashimoto** in order to provide a constant, balanced light in a refraction system, so that less filtering devices have to be used in the system, reducing the cost of unnecessary components being utilized.

As to claim 3, Hashimoto in view of **Reynolds** discloses all of the claimed limitations as applied to Claim 1 above **except for** that the light source comprises a plurality of colored LEDs arranged at preset spaced locations next to one another.

However, **Reynolds** teaches that the light source **36**, **38** & **40** comprises a plurality of colored LEDs arranged at preset spaced locations next to one another (Fig. 1).

It would have been obvious to one skilled in the art at the time of the invention to include the colored LEDs arranged at preset locations of **Reynolds** in the refractometer of **Hashimoto** in order to utilize more than one wavelength in the system, allowing different colored beams to be coupled in the fiber bundle but not before the desired time and let multiple reflection angles be detected for calibration techniques to be carried out.

As to claim 4, Hashimoto in view of **Reynolds** discloses all of the claimed limitations as applied to Claim 3 above **except for** that a said interference filter, by means of which the light of the LEDs can be filtered to a desired wavelength, is arranged downstream of each LED.

However, **Reynolds** teaches that a said interference filter **44**, **46** & **48**, by means of which the light of the LEDs can be filtered to a desired wavelength, is arranged downstream of each LED (Column 4, lines 58-65 and Fig. 1).

It would have been obvious to one skilled in the art at the time of the invention to include the arrangement of the filters of **Reynolds** in the refractometer of **Hashimoto** in order to only allow suitable wavelength into the fiber bundle, improving the color distribution within the wavelengths being illuminated on the sample under test.

As to claim 5, Hashimoto in view of **Reynolds** discloses all of the claimed limitations as applied to one of the above Claims above **in addition Hashimoto** discloses the receiver **15** is a one-dimensional CCD photodiode cell (Column 5, lines 48-50 and Fig. 2).

As to claim 6, Hashimoto in view of **Reynolds** discloses all of the claimed limitations as applied to one of the above Claims above **except for** discrete light sources of the number n are provided, which are followed downstream by a said glass fiber bundle with n inputs and one said output, wherein the said light sources are arranged on the input side in front of the different inputs of the said glass fiber bundle such that all wavelengths are represented at the output-side end of the said glass fiber bundle

However, **Reynolds** teaches discrete light sources of the number n are provided, which are followed downstream by a said glass fiber bundle **50** with n inputs and one said output, wherein the said light sources **36**, **38** & **40** are arranged on the input side in

front of the different inputs of the said glass fiber bundle **50** such that all wavelengths are represented at the output-side end of the said glass fiber bundle **50** (Column 5, lines 64-67 and Figs. 1 and 4).

It would have been obvious to one skilled in the art at the time of the invention to include the bundled location of **Reynolds** in the refractometer of **Hashimoto** in order to provide a component to combine multiple intensities together as soon as the filtering process is undertaken, eliminating unwanted interference before the sample under test is reached by the illumination beams.

As to claim 8, Hashimoto in view of **Reynolds** discloses all of the claimed limitations as applied to Claim 1 above **in addition Hashimoto** discloses the light source comprises discrete light sources **1** or **2**, whose radiations are reflected by means of a said optical diffraction grid onto a point **11** (Column 5, lines 13-16 and Fig. 2).

Hashimoto fails to disclose where the reflected beams are then coupled into a glass fiber.

However, **Reynolds** teaches where the reflected beams are then coupled into a glass fiber (Fig. 1).

It would have been obvious to one skilled in the art at the time of the invention to include the optical diffraction of **Reynolds** in the refractometer of **Hashimoto** in order to provide a component to combine multiple intensities together, improving distribution within the wavelengths being illuminated on the sample under test.

As to claim 9, Hashimoto in view of **Reynolds** discloses all of the claimed limitations as applied to Claim 8 above **in addition Hashimoto** discloses said discrete light sources **1** and **2** are arranged such that at the selected angle of incidence they lead to a diffraction angle that is the same for all wavelengths (Figs. 2 and 6).

As to claim 10, Hashimoto in view of **Reynolds** discloses all of the claimed limitations as applied to Claim 8 above **in addition Hashimoto** discloses a said direct vision prism **12** with dispersing property (dispersion prism) is provided instead of the said optical diffraction grid (Column 8, lines 55-63 and Figs. 2 and 6).

Although, **Hashimoto** in view of **Reynolds** does not use the term 'prism', it would have been obvious to one skilled in the art at the time of the invention to substitute the measuring member **Hashimoto** for the prism in order to achieve the predictable results of dispersing different wavelengths onto the sample under test.

As to claim 11, Hashimoto in view of **Reynolds** discloses all of the claimed limitations as applied to Claim 8 above **in addition Hashimoto** discloses a monochromatic lens is provided instead of the said optical diffraction grid (Column 8, lines 55-63 and Figs. 2 and 6).

Although, **Hashimoto** in view of **Reynolds** does not use the term 'monochromatic lens', it would have been obvious to one skilled in the art at the time of the invention to substitute the measuring member **Hashimoto** for the monochromatic lens, in order to achieve the predictable results of dispersing different wavelengths onto the sample under test.

As to claim 12, Hashimoto in view of **Reynolds** discloses all of the claimed limitations as applied to Claim 8 above **in addition Hashimoto** discloses said transmission diffraction grid with dispersing property is provided instead of the said optical reflection diffraction grid (Column 8, lines 55-63 and Figs. 2 and 6).

Although, **Hashimoto** in view of **Reynolds** does not use the term 'optical reflection diffraction grid', it would have been obvious to one skilled in the art at the time of the invention to substitute the measuring member **Hashimoto** for the optical reflection diffraction grid, in order to achieve the predictable results of dispersing different wavelengths onto the sample under test.

And as to claim 13, Hashimoto in view of **Reynolds** discloses all of the claimed limitations as applied to Claims 1 through 7 above **in addition Hashimoto** discloses claims the said glass fiber bundle (**50,** Reynolds) is designed such that it has a rectangular shape on the input side and a round shape on the output side, that the spectra of the said individual light sources **1** and **2** are directed in parallel to the short side and are always longer than the width of the cross section converter, and that a section, which determines the spectral full width at half-maximum of the entering light, can be selected from the spectral distribution of the light exiting the glass fiber bundle (50, Reynolds) (Column 5, lines 29-41 and Figs. 2 and 6).

7. Claim **7** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Hashimoto** (5,309,214) in view of **Reynolds** (3,825,335), as applied to claim 6 above, and further in view of **deJong et al.** (4,063,822). ('**deJong**')

As to claim 7, Hashimoto in view of **Reynolds** discloses all of the claimed limitations as applied to Claim 6 above **except for** lenses, which optimize the transmission of the light through the said interference filters at the same time and make possible a more defined effective wavelength and full width at half-maximum, are provided to improve the coupling of the light into the discrete beam paths.

However, **deJong** teaches lenses **3** and **4**, which optimize the transmission of the light through the said interference filters **5** and **6** at the same time and make possible a more defined effective wavelength and full width at half-maximum, are provided to improve the coupling of the light into the discrete beam paths (Column 8, lines 10-17 and Fig. 5).

It would have been obvious to one skilled in the art at the time of the invention to include the lenses of **deJong** in the refractometer of **Hashimoto** in view of **Reynolds** in order to couple the illuminated light so that the beams are received by the fiber bundle in a continuous and synchronized order, minimizing the detection time when a complete cycle is carried out.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

4,699,511 which discloses a guided wave band edge sensor apparatus and method for determining the curvature or deformation of a sensing interface

Any inquiry concerning this communication or earlier communications from the examiner should be directed to IYABO S. ALLI whose telephone number is (571)270-1331. The examiner can normally be reached on M-Thurs. 7:30a- 5pm, 1st F-OFF & 2nd F- 7:30a-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Toatley can be reached on 571-272-2059. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

IYABO S. ALLI
Examiner
Art Unit 2877
March 25, 2008

/Gregory J. Toatley, Jr./
Supervisory Patent Examiner, Art Unit 2877
31 March 2008